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VOL. I.—3RD YEAR—NO. 22. SYDNEY: SATURDAY, MAY 27, 1916. PRICE 6D.

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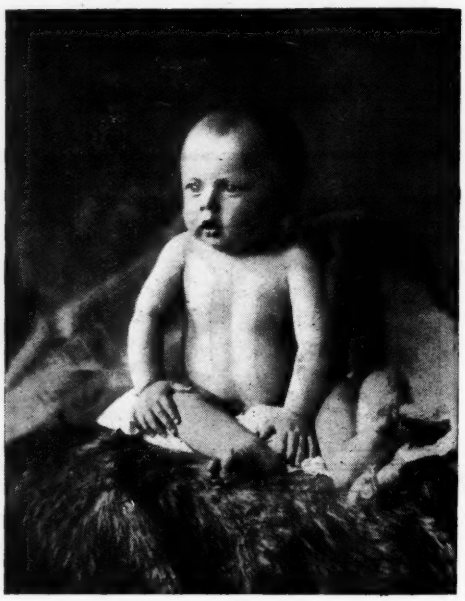

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THE MEDICAL JOURNAL OF AUSTRALIA.

VOL. I.—3RD YEAR. SYDNEY: MAY 27, 1916. No. 22.

SOME OBSERVATIONS ON INFLAMMATION OF THE FALLOPIAN TUBES.[1]

By **William T. Chenhall, M.D., F.R.C.S.,**
Honorary Surgeon to the Royal Hospital for Women, Sydney.

I greatly esteem your courtesy and kind invitation and hope my communication, though hurriedly prepared, may interest you and promote discussion.

Salpingitis is an extremely prevalent, distressing, destructive lesion, causing unending suffering, often death, wrecking constitutions and domestic happiness and ruining the lives of many females.

Its chief forerunners, gonorrhœal and septic infection, are causing colossal economic loss to the nation, and they will surely become more active after the war than at present.

Grossly infected, returned soldiers will become active agents unless legislative enactments deter. We owe a great and solemn duty to our women and to our country.

Upon no class of men will it more seriously devolve than upon yourselves. Thus, gentlemen, I address you upon a live, practical subject of the first importance. You are busy, trusted men; you enjoy special privileges, private and public confidence, and you daily meet, among men, diseases potential for the gravest danger to woman. Further, you daily meet, among females, infective conditions at an earlier stages than they are seen in consulting city practice. You can, and should, do all in your power for the protection of women, for the conservation and preservation of female life and health.

I shall esteem your commentaries, since your knowledge has the backing of individual experience, after all, our best clinical teacher. By expounding my own views I hope to learn from your criticism. Thus will discussion give profit to our meeting.

Coccal Infections.

If we except the exanthemata and infection by tubercle and colon bacilli, practically all cases of salpingitis arise from coccal infection, induced by filthy sexual intercourse or deliberate interference with the natural processes of reproduction.

The difficulties of preventing such primary infection are colossal, yet shed a gross reflection upon our Departments of Public Health and civic control. If ever a young, happy, prosperous nation were called upon to foresee grave potential danger for its women in the near future, Australia stands so charged to-day. The Government, the Church, the people should awake to responsibilities and act. We shall do our part.

In our knowledge of these organisms, their virulence, their characteristics of growth and reproduction, their lurking places, their destructive, death-dealing efficiency lies our most potent lines of defence and attack.

[1] Read at a meeting of the Western Medical Association on March 10, 1916.

We know our duty and shall do it. Unfortunately, the full weight of our knowledge and experience can never be efficiently applied until the public itself is enlightened upon the dangerous potentialities of these infections and instructed against the danger. I shall not consider tubercular infection, which is rare. May I pass, too, briefly over colon bacillus infection, though it often damages the right fallopian tube. May we not believe that misguided fimbriæ and cilia really gather upon themselves virulent colon germs floating upon adjacent peritoneal surfaces, and thus lead to self-destruction?

May I just mention one practical point? This extension of infection renders the grid-iron incision of less value in females than the right rectus incision, which easily permits free extension downwards for reaching the pelvis.

Endocervicitis.

Apart from the above causes, the primary seat of infection in all cases of salpingitis is the uterine cervix or the cervix and uterus. Such infection spreads with varying rapidity, at different periods and with unequal degrees of intensity, into one or both fallopian tubes. Thus, as in appendicitis, we find all variations in degrees of inflammation, and recognition of this fact is of great clinical importance. Restoration to normal, or almost normal conditions occur, as in appendicitis, but a much longer period is required. In the mildest forms, sometimes scarcely recognizable, the ciliated epithelium almost alone is involved. Severe cases involve the mucous membrane, or, constituting an interstitial form, involve the muscular and serous layers, thicken the tube, and form associated adhesions, which kink and tend to close the fimbriated end of the tube. Conditions beyond these form hydrosalpinx, intermittent or permanent, tubo-ovarian cysts, pyosalpinx or ovarian abscess. Sequelæ are often established in sterility and ectopic gestation.

Infection is rarely simultaneous in both tubes, and its occurrence indicates severe attack. Probably, in some cases, virulent infection spreads through one tube, attacks the adjacent peritoneal surface, and indirectly or secondarily involves the other fallopian tube. Practical experience has convinced me that such mode of infection is not infrequent. For instance, one frequently finds extensive lesion and resultant destruction in one tube, whilst, in the other, mere sealing of the fimbriated end co-exists with an almost normal isthmus and ampulla.

Among nulliparous women, the chief cause of salpingitis is gonorrhœa. This may be acute, virulent, rapidly destructive or less active, and hence neglected and remain, finally, as a latent, gonorrhœal infection of the mucous membrane of the cervix and uterus, or both.

It is difficult to imagine the occurrence of infection of the uterine mucosa without some degree of extension to the fallopian tube, especially in parous

women, yet I believe it possible in nulliparous women for mild infection to be limited to the cervix by the barrier created by the internal os.

Even the uterine infection may be cured spontaneously, whilst the cervical canal may constitute a lurking-place for gonococci.

These observations hold great moral weight, and are of grave clinical and surgical importance. All of us have seen cases of salpingitis initiated or awakened within two weeks after dilatation of the cervix. No problem in the whole field of gynæcological practice presents greater difficulty to the conscientious, thoughtful surgeon than determination of the moral right and surgical discretion of dilating the uterine canal when endocervicitis, presumably due to coccal infection, exists.

In nulliparous women, the most important and most frequent cause of endocervicitis is gonorrhœal infection, yet it is often difficult under microscopical examination, owing to the presence of mucus, to find the organisms. In these women the frequently synchronous occurrence of dysmenorrhœa and sterility substantiate belief that spontaneous closure of the internal os against extension of infective process frequently occurs. It is to this subacute, chronic or so-called latent gonorrhœal infection which, as general practitioners, I would earnestly direct your attention.

Such cases are usually quite innocently acquired from a supposedly-cured, or, shall we say, supposedly-harmless, prostatitis in the male. Herein for you lies a double duty. Advise the male against misdeed; avoid dilatation of such an infected cervix. Cure the endocervicitis. Examine the condition under full exposure, and tender it precise treatment. Such cases may, later on, present for sterility, or on account of slow, insidious extension and pain, owing to involvement of the peritoneum or cellular connective tissue or the fallopian tubes and ovaries. Such extensions and consequent pain and destruction will surely follow dilatation and intra-uterine manipulation, as they do after abortion or labour, should such occur.

The history, and especially the urinary anamnesis, as well as accessory lesions of the lower genitalia, will guide you. Remember, always, that the cervix furnishes the original focus from which all upward infection has spread, or will surely spread if nature's barrier at the internal os is disturbed. If infection has already spread and initiated lesions above, these will dominate the situation and indicate treatment.

Conservatism of the cervix is imperatively demanded, since by care and correct treatment we may guard against upward extension of disease, which, in acute form, will excite pain, in milder form the negative symptoms of disappointing sterility or the more positive and dangerous one of ectopic gestation, with its own disappointment to maternity. May I reiterate that sterility due to painless or almost painless salpingitis is often secondary to cervical catarrh, itself initiated by a chronic prostatitis, and frequently due to ill-directed surgical breaking down of nature's barrier by dilatation and intra-uterine manipulation, without first curing the endocervicitis.

Similarly, in parous women, gonorrhœal infection may finally, without causing marked distress, create sterility, a danger increased enormously by ill-timed intra-uterine manipulation, by abortion, or even subsequent to delivery at term. Infective males will assuredly increase in number in each of your district during the next two years. Use your microscopes, or entrust your slides to more expert hands in private laboratories or in the Department of Health.

Two years ago the husband of a virulently infected patient assured me that he believed himself cured, because he had not seen any discharge for two weeks. His doctor, without any examination on this scant evidence, replied to his enquiry that he "was all right!" Intercourse was immediately followed by virulent infection, which cost his wife a painful, dangerous operation, both her fallopian tubes, resultant sterility, with its mutual disappointment. He added that the advice was given in a motor-car by the doctor, who was a great personal friend. If only half true, it depicts grave error.

Endometritis.

Let us now consider other equally destructive and more dangerous infections. All endometritis is initiated and continued by bacterial organisms, and this fact also holds good in salpingitis.

Pregnancy, ending in abortion, or at term, may become complicated by infection by streptococci, staphylococci, gonococci, bacteria coli or a mixture of some or all of these organisms, or by saphrophytic bacteria, capable of growth upon dead tissue only, and unable to live upon the vital structures of the endometrium.

When all products of conception have been expelled or removed, saphrophytic bacteria disappear or cease to cause harm. They should, therefore, be removed as early as possible and with a minimum disturbance of nature's barriers. The use of a sharp curette is, therefore, contra-indicated in such operation.

Putrid Endometritis.

Putrid endometritis, if it may be called by this term, may arise from decomposition of retained lochia, but it is chiefly associated with retention of fragments of placenta, membranes and blood-clot.

The uterus is always bulky, flabby, deficient in muscular contraction, and its vessels are dilated and toneless.

The lochia are usually abundant, dark brown and, later, become purulent. They contain shreds of decidua and membranes, and the odour is characteristically offensive.

The uterine interior may contain masses of decomposing tissue, and the surface is lined by a thick layer of hypertrophied decidua, often covered with adherent blood-clot. Larger polypoid out-growths mark the placental site. Speedy necrosis occurs, and, in a few days, the inner surface of the uterus is covered by a thick layer of pultaceous material, which, gradually disintegrating, secretes abundant offensive discharge.

Microscopical examination reveals masses of micro-organisms in the superficial portions of the necrotic

decidua. The leucocytic protective zone usually becomes well-developed. It is situated in the deeper layer of the decidua, and forms a complete barrier to the further invasion of bacteria.

Putrid endometritis, if I may use the term, is essentially a benign disease in its initial stages, the infection remaining limited to the superficial layers of the decidua and being sharply defined from the healthy uterine tissue.

Not uncommonly, however, putrefactive changes are associated with infective endometritis, and the distinction between the two types cannot always be maintained.

Infective Endometritis.

Infective endometritis results from invasion of the uterine cavity by organisms capable of penetrating the living tissues. These are the various cocci already discussed, to which we may add the colon bacillus and, more rarely, certain aerobic bacteria, especially the *bacillus aerogenes capsulatus.*

Invasion of the uterus usually occurs at the placental site. Lymphatic channels become infected with purulent lymph, and the organisms rapidly spread into the subperitoneal lymphatic spaces, resulting in peritonitis.

Extensive destructive changes may occur in the uterus or general septicæmia result. Time will not permit their consideration.

It matters little whether the above conditions arise in connexion with artificial delivery at term or in connexion with spontaneous or induced abortion; the results are similar, though variable in intensity.

As a matter of fact, the fallopian tubes, which I particularly wish to consider, rarely become infected during the acute stage of infective endometritis, probably owing to the small size of the opening into the uterine cavity, which speedily becomes occluded by the swelling of the mucosa.

The gonococcus, however, if present, usually extends superficially along the mucous membrane of the uterus, reaching the tube often two or three weeks after delivery. Some of the curiously delayed attacks of salpingitis following delivery thus arise, and perplex, annoy and distress the accoucheur, the nurse and the patient. Exceptionally, streptococci may also enter the tube in this fashion.

Great clinical importance attaches to this distinction, if it can be made, since it affords a valuable guide to treatment. In mixed infections, such distinction is impossible, and, unfortunately, these are frequent.

Generally, I should say, streptococcal infection involves the fallopian tubes most frequently by direct extension from the pelvic peritoneum or cellular tissue, as a result of severe lymphatic infection of the uterus.

Slight changes may occur in mild cases, but, in virulent infection, such as follows criminal abortion, the mucous membrane of the tubes becomes swollen and infiltrated with round cells. The lumen becomes distended by serum and muco-purulent fluid teeming with cocci.

The tube becomes thickened, tortuous, deeply congested, and softened, and, if occlusion of the abdominal ostium occurs, a pyosalpinx may rapidly form.

Pelvic peritonitis, usually present, is conservative and exerts favourable influence by limiting the area of invasion. Such a pyosalpinx may rupture directly into the general peritoneal cavity.

For this reason, great care should be exercised in all examinations of the patient.

The gonorrhœal type of salpingitis developing more gradually after delivery is usually a relatively mild type, and results in adhesive peritonitis, ultimately predisposing the patient to either sterility or ectopic gestation.

Exceptionally, a pyosalpinx of gonorrhœal origin exists during gestation. Rupture of the sac or leakage of pus may result from injury during labour, and this is usually followed by general peritonitis, often commencing almost immediately after delivery. These are some of the curious cases of peritonitis which follow normal, natural delivery when neither internal examination has been made nor artificial aid to delivery applied.

The gonococcus undoubtedly plays a large part in the causation of puerperal peritonitis, and has frequently been found in pure culture in diffuse purulent forms of the disease.

Gonococcal and Streptococcal Infections.

I wish you to be clear on one important point.

Whereas the gonococcus, by direct extension, involves in continuity the mucous membrane of the uterus and fallopian tube, the streptococcal infection rapidly gains entrance through some solution of continuity of surface, that is, some wound, spreads rapidly through the planes of cellular tissue, causing pelvic cellulitis, and through the lymphatics to other structures and the general circulation. Lacerations of the perineum, vagina, cervix and uterus open up for infection the connective tissue of the pelvis. Serous or fibrinous effusion speedily forms, and, in severe infection this becomes rapidly purulent. Such effusion is situated most commonly in the pouch of Douglas and, in my experience, much more frequently towards the right than the left side.

Usually, it is limited above by adhesions between the coils of intestines. The posterior vaginal fornix becomes firm and resistant from subperitoneal œdema, and the uterus is usually displaced upwards and forwards, though displacement will depend upon the position and amount of effusion or pus.

Usually, the effusion is limited by the pelvic floor above, and below it is often sharply limited by the tense vaginal fornix.

The upper limit of exudation formed by the coils of intestine and lymph is often ill-defined.

I should say that the outstanding feature of this infection, as compared with the gonorrhœal, lies in the early exudation of a large amount of serum. Although this usually occupies the pouch of Douglas, I have, in many cases, found encysted collections at the sides of the pelvis.

I have met some cases, which simulated closely a cystic tumour, and, before attempting to open such masses by vaginal coeliotomy, one must be certain that bowel is not included.

Tubal or tubo-ovarian abscess frequently results, and may rupture into the peritoneum, bladder or

intestine, but the usual tendency, fortunately, is for the pus to trend towards the vaginal vault. In two cases I have seen, it reached the abdominal wall above Pourpart's ligament.

Pelvic cellulitis is usually unilateral, but, occasionally, both broad ligaments and both tubes become involved, the uterus being embedded in a firm mass of inflammatory exudation and both tubes filled with pus, whilst adherent bowel is everywhere present and adds great difficulty to operative procedure.

All forms, all grades of salpingitis may occur, and the infection being a mixed one, the final result will largely depend upon the predominating organism.

Sequelæ.

Two most important sequelæ of salpingitis are sterility and ectopic gestation.

Adhesions, torsions, displacement and fixation, with accompanying serous exudation and binding-down, may completely occlude the abdominal openings of the tubes, causing absolute sterility.

However, closure of the outer ends of tubes does not always occur, but the cilia become destroyed, and herein would seem to lie the chief ætiological factor in tubal gestation. Usually, the fallopian tube in cases of ectopic gestation presents either an early and slight form of inflammation or a much later stage, showing almost complete healing.

Curiously, one often finds the other tube in a condition of salpingitis such as to warrant its immediate removal.

Partial restoration of a tube to normal after a long period of sterility has always seemed to me to be proven by the occurrence of ectopic gestation.

Earnest, patient application of all known methods of medical treatment is warranted by the almost complete recovery, which not infrequently occurs. The alternatives are hydrosalpinx or tubo-ovarian cysts, or, much more frequently, persistence of purulent inflammation, forming pyosalpinx and tubo-ovarian abscess.

Operative Procedure.

I shall not weary you by consideration of treatment with which you are fully cognisant. To those engaged in operative work my own plans of surgical procedure may be interesting. Vaginal coeliotomy is rarely of value in cases of gonorrhœal infection, though vaginal drainage may be imperatively demanded. On the other hand, in cases due to streptococcal infection of the pelvic cellular tissue, a free opening in the vaginal vault is usually of the greatest value, and should almost invariably be done first. Such procedure may, in desperate cases, be all the patient can stand, and wondrous relief is sometimes immediately afforded. If the abdomen must be opened for drainage in acute peritonitis, then drainage may be obtained through the vaginal coeliotomy wound, as well as through the median incision and loin stab wounds.

Great care is necessary in vaginal coeliotomy, for fear of injuring the bowel. I guard against this by opening the vaginal vault over the seat of fluctuation, or, in its absence, over a point determined during examination, and then press my gloved finger in search for serous exudation or pus. Free drainage is all that is necessary, but all loculi must be reached.

I have formulated my own plan for attack upon pus tubes, and believe it based on sound principle. Pus tubes should be removed without rupture, and, wherever possible, the ovaries should be saved. Such cases are extremely difficult, owing to intestinal adhesions. It is sound practice to work from known to unknown anatomical positions. In even the most complicated cases, the uterine end of the tube can be defined, whereas the tube itself and the ovary may be involved in dense adhesions, buried beneath coils of inflamed intestine and tucked deep down in Douglas' pouch. To find and clamp the infundibulo-pelvic fold first is to destroy all prospect of saving the ovary. I believe this to be unsound practice, though it is usually done. Further, our constant aim should be to work towards the intestine, since, in separation of adhesions thereto, less damage will accrue.

I first divide the uterine end of the tube, between clamps or ligatures, and immediately behind the round ligament find a plane of tissue, along which the tube may be separated easily with the gloved fingers, if care be exercised. Gradually I work towards the infundibulo-pelvic fold, examine the ovary and deal with it according to demands. If the roof of the ligament anterior to the tube be carefully divided and dainty movements of the fingers be made, it is remarkable how often a large pus sac may be lifted up without rupture. The most dangerous area is towards the intestine, and rupture, if it occurs, cannot infect the intestine, since the escape of pus is towards the plane of tissue opened up. It is thus possible to dig out a tube from the depths of the pouch of Douglas, from which drainage may be secured through the vaginal coeliotomy wound.

In conclusion, may I solicit careful weighing of my suggestions, which, after all, are but refreshers to your busy minds. Let us unite in guarding our women against the pitfalls which await them. Thus shall we render incalculable service to humanity and our country, and maintain the highest, noblest traditions of our profession.

Reports of Cases.

A CASE OF LIVER ABSCESS.[1]

By **Donald A. Cameron, M.B., M.S. (Syd.),**
Major, A.A.M.C., A.I.F.; Brisbane.

Private K., 11th Battalion, aged 28 years, was first seen by me on December 16, 1915. I think the case is of sufficient interest to bring before the members of the Queensland Branch of the British Medical Association, in view of the fact that some of the returning soldiers may be afflicted in the same way, and because it may enable them to appreciate the difficulties of diagnosis. Unfortunately, the notes are not fully recorded. The patient was admitted to No. 1 Australian Auxiliary Hospital, Harefield, on November 18, 1915. The history on the medical case sheet is as follows: Thirteen weeks in Gallipoli; invalided for influenza; sent to Gibraltar; treated for gall-stones; had great pain under right costal margin; had no jaundice and did not vomit. Was in Gibraltar six weeks; for three weeks was in bed; was then transferred to No. 3 L.G.H., Wandsworth, where he remained for four days; felt well there and went out

[1] Read, by permission of Lieutenant-Colonel W. T. Hayward, Officer in Command of the Australian Auxiliary Hospital, Harefield, at a meeting of the Queensland Branch of the British Medical Association, on April 7, 1916.

on furlough. A week ago was again seized with pain under right costal margin; pain lasted four days, but was not continuous, lasting, say, ten minutes, with intervals of freedom from pain for, say, six to seven hours; he felt faint with pain, while it lasted; he had no jaundice.

On admission he was feverish. Temperature 100.8°, pulse 112. He had no pain.

Chest.—Rhonchi over chest, mostly sonorous in character; râles on deep inspiration at both bases. No alteration in breath sound.

Heart.—Quite clear.

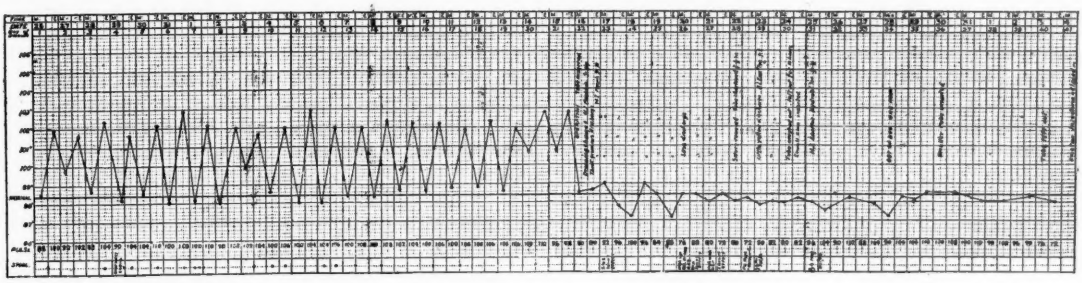
Abdomen.—No hepatic enlargement; no tenderness anywhere.

Diagnosis.—Bronchitis (mild); no evidence of gall-stones.

(Signed) A. E. MILLS, Major.

On December 7, 1915, a report from the Lister Institute read: "No T.B. in sputum."

On December 13, 1915, there was marked deficiency in the breath sounds and resonance over the right base, reaching within 1½ inches of the scapula. Rhonchi were heard over both bases. The temperature chart dates from November 26, 1915. Somehow, the record before that date was lost, but Captain Power informs me that the temperature was high at night and low in the evening.



On December 16, 1915, I was asked to operate upon a patient with an empyema, and was shown a syringe full of pus. A suggestion was made by me that possibly the case might be one of liver abscess. The patient denied having had dysentery or enteritis since he had enlisted, and there was no past history of dysentery. All the time he was on the Gallipoli Peninsula he suffered from constipation.

Within an hour and a half from the time I saw the syringe full of pus, the patient was on the operation table. An incision 2½ inches long was made in the line of the ninth rib, posteriorly to the posterior axillary line. The periosteum was incised and freed from the bone, a portion of the rib 1½ inches long was removed and the pleural cavity opened. The pleura was healthy. The diaphragm was bulging upward and outward against the wall. An exploring needle was introduced through the diaphragm into the liver, and pus was drawn off; the needle was left *in situ*. An incision was made in the diaphragm and a large pair of strong sinus forceps was pushed through, along the course of the needle, and opened out; the gloved finger was then pushed into the hole, to block the rapid gushing out of pus. A very extensive abscess cavity in the upper and posterior surface of the right lobe of the liver was opened into. The finger could not reach the walls at first; as the pus escaped, however, the cavity contracted down, and the soft, necrotic, ragged walls could be felt. Several small loculi were broken down as the contracting walls came within reach of my finger. No distinct fibrous capsule could be felt. About two pints of a semi-chocolate-coloured, grumous pus, creamy in parts, came away from the cavity. It had a very faint, curious odour. The patient did not suffer any shock. A large drainage tube was inserted into the cavity and secured to the edge of the wound by a silk-worm suture. No attempt was made to shut off the pleural cavity by sutures or gauze packing. The patient soon came round from the anæsthetic and two hours later he was complaining of hunger. A specimen of pus was saved and sent to the Lister Institute. The report received was as follows: "Amœbæ were present in the pus. No organism of a bacillary nature and no cocci were present."

Notes taken during the progress of the case by Captain Clowes, who was in charge of the Surgical Ward, to which the patient was transferred after the operation:—

December 16, 1915.—The dressing was changed in the evening. There is a copious discharge of grumous pus. The patient complains of pain on moving. The temperature fell to 98° this evening.

December 18, 1915.—The patient complains of pain in the right shoulder and arm. Both lungs are expanding.

December 19, 1915.—He has been put on full diet and is feeling much better.

December 20, 1915.—There is still a copious discharge. Profuse perspiration occurred during the night.

December 21, 1915.—The appetite is much improved. The patient again perspired freely during the night.

December 22, 1915.—He is fairly comfortable, except when coughing. The skin has been acting freely at night. Half an inch of drainage tube was removed.

December 23, 1915.—He is very comfortable, and is sitting up with a back-rest in bed. The first hypodermic injection of emetine (gr. ½) was administered at 6 p.m. He was ordered emetine in half grain doses every morning and night. He complained of some abdominal pain in the evening.

December 24, 1915.—The abdominal pain has increased in intensity, and the discharge is now distinctly yellow.

December 25, 1915.—He still complains of abdominal pain. Relief was obtained after a large enema. The tube was coughed out in the afternoon; one of smaller calibre was inserted.

December 26, 1915.—The discharge is lessening rapidly and the wound is clean looking. Four drachms of magnesium sulphate every morning was prescribed.

December 28, 1915.—The patient sat up in a chair for the first time.

December 30, 1915.—He walked about the ward.

December 31, 1915.—The dressing is now done once a day.

January 2, 1916.—The patient perspired freely last night. He went out for a short walk.

January 3, 1916.—The tube was left out altogether.

January 7, 1916.—The emetine was discontinued. The patient has gained over a stone in weight since the operation.

January 10, 1916.—The patient vomited yellowish fluid since the 9th. The cause has not been determined, but it was probably gastritis.

January 14, 1916.—There has been no vomiting since the 11th. The patient is feeling very well.

The wound was completely healed on January 20, 1916.

Remarks.

The diagnosis of amœbic abscess of the liver is often very difficult, especially if there is no previous history of dysentery. The onset may be gradual or sudden; there may be a dull sensation of weight in the hepatic region or pain may come and go in acute spasms. Pyrexia is usually, but not always, present. Loss of flesh is common, and the patients often have a septic look. Jaundice is rare; sometimes it is perceptible in the conjunctiva only. For a considerable time the symptoms may baffle the physician, until

definite enlargement of the liver gives a clue as to their cause. An examination with an X-ray screen often reveals an enlargement on the upper surface of the liver. This method should be utilized more freely.

The operative treatment of liver abscess consists of two main methods; the open method and aspiration. In amœbic abscess of the liver, as a rule, no other organisms are present, consequently, the method of aspiration has been carried out with success by some surgeons. Rogers advised injection of the cavity with a sterilized solution of quinine (grs. x. to ʒ i.). Thurston has shown that this is not necessary if hypodermic injections of emetine are given. Sometimes the aspiration has to be repeated two or three times, and even then open operation may be required. I have never tried aspiration myself in cases of liver abscess, but have at times obtained successful results in cases of empyema of the pleura; nevertheless, I do not advocate the method in the latter cases.

The site of operation by the open method depends on the position of the abscess. If the abscess is near the upper surface, it is better to resect a rib and to approach the cavity from the thorax. Some surgeons pack off the pleural cavity with gauze, others prefer to suture it. In the case recorded, I did neither. It may be necessary to open the abdomen to reach an abscess pointing on the under surface of the liver, and to drain through the peritoneum.

After efficient drainage has been established, it is very important to prevent secondary infection and to administer gr. ⅓ to ½ of emetine hypodermically twice a day.

The mortality of liver abscess under ordinary treatment is high. Sambuc, in Tonkin, gives it as 50%. Thurston noted a mortality of 33% in 101 cases. Sambuc, in his cases, showed that when one abscess was present the mortality was 23%; with two abscesses it was 45%; with three 90%; and with more than three it was 100%. The records show that, even with careful treatment, not more than one-third of the patients usually recover.

As many soldiers, who have had dysentery, will be returning to Queensland, I have written up these notes, with the object of bringing forward this important complication, which is often very difficult to diagnose. I hope that they may be of use in drawing attention to the subject.

EPIDERMOLYSIS BULLOSA.

By **Norman Paul, M.B., Ch.M. (Syd.),**
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This is a somewhat rare eruption, usually congenital, in which there is a special vulnerability of the skin to various forms of trauma, with the formation of vesicles or bullæ. It is often hereditary, and Bonajuti has reported an instance of thirty-one persons being affected in five generations. The subject of the present article is a girl, I.P.C., æt. 8½ years. The mother of the child volunteered the following history. The patient is the youngest of a family of nine children, the other members of which, including the parents, have never shown any manifestations of a similar condition. The mother noticed that from the time when the child was nine days old, any slight injury, or friction, produced vesicles or bullæe on certain bony prominences of the arms and legs. The footwear has always been a source of great trouble, as lesions are produced by ill-fitting shoes. The blebs that arise on the affected situations vary in size. For some years they filled with a clear fluid, which became pustular and then crusted, but recently the majority of the bullæ contain blood. The child is of a distinctly nervous temperament. The mother is of opinion that the condition is improving slightly, but this is probably due to the fact that the child now realizes the condition, and so is careful to avoid any injury or irritation. On examination, there is atrophic scarring, especially in evidence on the knees, also on the elbows, ankles, dorsum of the hands and feet and their phalanges. This scarring marks the site of previous blebs, whilst crusts are also present on the hands and knees. There is on the ankle a large bulla caused by the child knocking against someone whilst entering a shop. The nails are extensively affected, those of the thumb and index finger of the right hand, together with all the nails of the toes are brownish in colour, raised from the nail bed and dystrophic. The majority are long, as they fall out if an attempt is made to cut them. Any injury to the nail matrix produces these dystrophic changes in the nails. This is especially evidenced in the nails of the toes, due to the friction of shoes, and no opportunity is given for recovery. The finger nails, however, sometimes recover entirely. On one foot there are several milia-like bodies (epidermal cysts) near the metacarpo-phalangeal joints. There are no vesicles or bullæ affecting the mucous membrane of the mouth. This condition has also been called *congenital traumatic pemphigus*, as it appears to have a relationship with true pemphigus. A case analagous to that of hereditary *epidermolysis bullosa* has been observed by Colcott Fox to develope after the existence of true pemphigus for nine years. Moreover, there are features which are common to both diseases, such as the presence of milia-like bodies (epidermal cysts) and, in both, by firm pressure with the finger on the skin the horny layer can be made to slide on the subjacent layer with the production of bullæ (Nikolsky's sign).

Reviews.

THE ACCOUNT OF THE OPHTHALMOSCOPE.

The description of an ophthalmoscope[1] published by von Helmholtz in 1851 has been translated into English by Dr. T. H. Shastid. He begs his readers to be lenient to his imperfections and appreciative of the timeless and deathless character of this little document. To those who cannot read this classic contribution to human knowledge in the original, since it has not previously been translated into any other language, the translation may be offered as a faithful rendering. The translator has produced the direct and simple style of Helmholtz by a frequent use of words of Anglo-Saxon origin. It is regrettable that this treatise is not more widely known, as it is a model of accuracy in presentation. Its opening paragraph sets forth that it contains the description of an optical instrument by which it is possible in the living to see and recognize exactly the retina itself and the images of luminous objects which are cast upon it. The instrument has, for this purpose, to solve two different problems. It illumines that portion of the retina on which we gaze through the pupil, and it provides optical expedients which make possible for the observing eye a correct accommodation for the objects which it would see. The question of the lighting of the dark interior of the eye is considered first. After showing why the ground of the eye behind the pupil appears so deep a black, von Helmholtz describes how the posterior chamber is illuminated. He unfolds the principles which have guided him during the construction of the instrument, and which would serve as a basis for oculists who think it necessary to produce modifications of the instrument for practical purposes. In the second place, he discusses how the light returning from the retina of the observed eye to fall into the eye of the observer must be directed so that distinct images of the retina may be received. The general design of the ophthalmoscope having been made evident, the details of its construction follow. He represents next the relations of the vessels and the macula in the retina, as seen by the aid of the ophthalmoscope. He proceeds to mention that, with the aid of his device, changes in the transparent parts of the eye in front of the retina should be recognizable, that exudates into the retina, increased repletion of the vessels and vascular varicosities must yield themselves to observation, and that opacities in the vitreous body will be seen, and their density measured. He concludes that he believes and holds the expectation not to be exaggerated that all the alterations of the vitreous and of the retina which until that time have been found in cadavers, will also permit of recognition in the living eye, a possibility which appears to him to promise remarkable advances for the pathology of the structure. The translator appends a note to this prophecy, so splendidly fulfilled, in which he says that there are just two kinds of ophthalmology, that which came before and that which followed the publication of this memoir.

[1] The Description of an Ophthalmoscope, being an English Translation of von Helmholtz's "Beschreibung eines Augenspiegels," by T. H. Shastid, 1916. Chicago Press; Royal 8vo., pp. 33.

The Medical Journal of Australia.

SATURDAY, MAY 27, 1916.

Cerebro-Spinal Fever

The publication of a number of papers by workers at the Lister Institute, in which the infective nature of the meningococcus is challenged, demands thought from all those called upon to combat epidemic cerebro-spinal meningitis. This disease has been distinguished from other brain fevers for rather more than a century. Thirty years ago, bacteriologists began to examine its microbic flora. Two organisms were found in the meninges of those affected, the pneumococcus of Fraenkel and the *diplococcus intracellularis* of Weichselbaum. For some years opinions were divided as to which of these organisms was the infective agent. The accumulation of clinical and pathological data on the characters of the meningeal infections and of the epidemiological evidence on the course of the outbreaks lead to the establishment of epidemic cerebro-spinal fever as a disease quite distinct from lobar pneumonia and meningeal affections due to the pneumococcus. The *diplococcus intracellularis* was regarded as the infective agent of the epidemic disease, and its presence was accepted as proof of the nature of the disease in sporadic cases. In 1907, Simon Flexner published the accounts of his studies of the *diplococcus intracellularis*. He describes how meningitis can be induced by intrathecal inoculation of the organism, and how the *diploccocus intracellularis* can set up in various species of monkeys lesions of meningitis which bear a close resemblance, even in details, to the lesions which are caused naturally in human subjects. He thought that his results were convincing as to the relations of the organism to the human disease. Actuated by this belief, he essayed a search for the antibodies produced in the animal body against this microbe. The studies culminated in the discovery of his well-known serum. These contributions to medical knowledge removed any doubts as to the cause of the disease. The organism acquired gradually the name of meningococcus.

Drs. Hort, Lakin and Benians do not deny the association of the meningococcus with persons suffering from cerebro-spinal fever, but they contend that the micrococcus is not the infective agent. They admit that the introduction of the meningococcus into the spinal canal gives rise to meningitis, but they affirm, with logical accuracy, that such experiments do not prove that the meningococcus conveys the infection to the human subject. They point out that the microbe does not induce meningitis when it is introduced into the blood-stream or peritoneal cavity of animals. Even massive doses appear to be without pathogenic action when injected into the peritoneal cavity of a monkey, although these doses may cause the death of rodents. Such contentions would serve only as pleas for a better demonstration of the path traversed by the meningococcus to the human meninges, if they were not supported by positive experimental results of a remarkable character.

It is well known that the spinal fluid from some patients suffering from acute cerebro-spinal fever reveals no meningococci on microscopical examination, and gives rise to no colonies on cultivation. These investigators have incubated such fluids, and have noted that meningococci and other organisms make their appearance. Instead of assuming with most bacteriologists that these microbes have been derived from a few scattered bacteria, already present, consideration has been given to the idea that minute precursors of the meningococcus are present in the fluid. To test this notion, the fluids have been filtered through porcelain, to remove visible particles and incubated after filtration. Meningococci, meningo-bacilli and other organisms have made their appearance. Instead of regarding this result as due to a defect in the filters, these investigators have proceeded to experiment on rhesus monkeys. They have injected the fresh filtrates and the incubated filtrates into the peritoneal cavity. The consequences of the injections are most remarkable. Intense fever, meningitis and even death have followed the introduction of the fresh filtrates. In the case of the monkey that died, meningococci have been found in the inflamed meninges. The incubated filtrates, though teeming with meningococci, have produced no pathogenic symptoms. The in-

vestigators think it reasonable to conclude that the infectivity to monkeys of cerebro-spinal fluid from acute cases of the epidemic disease is in no way dependent on the presence of meningococci or meningo-bacilli. On the contrary, the experiments seem to indicate the presence in the spinal fluid of a minute organism, capable of passing through a filter, which is highly infective and which is possibly the precursor of the meningococcus of Weichselbaum and the meningo-bacillus that they have described. While it may be permissible to draw this conclusion, it seems to us important to note that there were only two injections of fresh filtrates, especially since another monkey injected with unfiltered spinal fluid from a severe case developed no symptoms of disease. These investigators have no doubt been influenced by their relatively numerous experiments with incubated filtrates and viable cultures, which gave rise to no pathological symptoms.

Apart from these experiments with monkeys, there remain the curious facts that filtered and unfiltered cerebro-spinal fluids, which yield no colonies on immediate cultivation, teem with meningococci and other organisms, which are regarded as pleomorphic forms of meningococci, after a period of incubation. It appears not unreasonable to point out that the meningococcus is difficult to cultivate, even when present in considerable numbers. In this connexion we are reminded of an observation of Flexner, that the addition of salts of calcium and potassium to culture media enhances the viability of the meningococcus.

Whatever criticism or explanation may be offered as to the meaning of these results, and whatever may be the significance of these observations, further investigation on these lines is urgently needed. New ground has been broken and fresh avenues for research have been indicated. In the light of the failure of the blood of persons suffering from the disease, of the spinal fluid containing meningococci and of cultures of the meningococcus to produce the disease after intraperitoneal injection, the epidemiologists in Australia might direct their attention to those with meningococci in their naso-pharynges. The demonstration of the infectivity of such persons would be of great value in the present state of our knowledge. If they are infective, the morphological structure of the infective agent will not affect the attitude of the medical officers of health towards these carriers. If they are not infective, search must be made for the carrier of the infective agent.

THE SPREAD OF DIPHTHERIA.

The report of the Departmental Committee on the question of the spread of diphtheria, of which we publish a summary in another column, is characterized by prudence and the admission that several points still require elucidation. The Committee review the subject and come to the conclusion that this disease is still far too frequent and far too fatal in Australia. There is some available information intimately connected with the question of the control which they have left untouched. They find that antitoxin has effected a marked saving in life. As a larger proportion of the patients recover since its introduction, it is reasonable to assume that a larger number of persons harbouring diphtheria bacilli in their fauces or nasal cavities exist in the general population. These persons are potential sources of infection. Unfortunately, the figures adduced by the Committee reveal the fact that the reduction in the mortality by antitoxin is not as great as it should be. There is ample evidence that, when antitoxin is applied within 24 hours of the onset of the illness, the mortality can be reduced to a minimum or even to nil by adequate doses of antitoxin. Early diagnosis can, as they indicate, be carried out by means of bacteriological examination of the secretions, and this can be made available even in the remote districts, provided that the metropolitan authorities use a little foresight, and are prepared to lend timely assistance when called upon. But in order that this essential to a sound prophylaxis may be applied properly, it is necessary to enlist the co-operation of the general practitioner. Whenever diphtheria is suspected, even if the grounds be but slender, a bacteriological examination should be carried out. And as soon as the suspicion is held, antitoxin should be given by subcutaneous injection in adequate doses. In this way, and in this way alone, can the mortality be diminished.

The earlier the patient is placed under strict treatment, the smaller will the chances be of a spread

of infection. The isolation of the patient during the whole course of clinical illness must result in a reduction of infection. A much more difficult problem is presented in the question of the control of the convalescent, in whose fauces or nares bacilli continue to vegetate. Those who have practical experience of diphtheria epidemics know that the bacilli persist frequently for many months in these persons. The Committee has suggested that further investigation is required before it can be determined which is the best method of dealing with these carriers. With this we concur. While isolation is certainly an ideal method, it does not appear to be practicable. The Committee do not attempt to draw any line of differentiation between these convalescent carriers and true carriers, *viz.*, the persons who have not manifested any signs of the disease and yet harbour the bacilli in their throats or noses. It is not certain whether these individuals are as frequently infectious as the convalescents. Should a deliberate research on this point reveal that the infectivity of these persons is low, the task of controlling the carrier would become somewhat less difficult.

There are two important points on which we regret that the Committee did not express an opinion. The first is the relative frequency of the persistence of faucial and nasal infection. It is held by some observers that upwards of three-quarters of carriers are missed if the mucus from the fauces is examined to the exclusion of that from the nares. The second point has reference to the prophylactic value of von Behring's toxin-antitoxin mixture. It has been shown that antitoxin alone produces feeble results as a prophylactic, but should the toxin-antitoxin be capable of preventing infection, a short cut would be offered for lessening the amount of this disease throughout the Commonwealth.

A GRAND OLD DOCTOR.

Two years and three months before the battle of Waterloo a child was born at Southsea. This child survived his birth and the other emergencies of life for over 103 years. On May 14, 1916, his remarkable career was closed. Henry Benjamin Hinton was educated at Portsmouth, and began life at the age of 15 years in the office of his cousin, a publisher. He acquired a great interest in Indian affairs, and resolved to enter the medical profession, with the object of spending his life in that country. He was apprenticed to a surgeon in Limehouse, and in the year 1832 he became a student at the London Hospital. Two years later he entered at Westminster Hospital, where he was a pupil of the Waterloo veteran, Guthrie. He passed the examination for the membership of the Royal College of Surgeons in 1835. The examination was concluded in one day, and is said to have been entirely *viva voce*. After qualifying, he became surgeon on board an East Indian merchantman of 800 tons displacement. The passage took about five months, and he effected it three times. In 1839 he obtained a commission in the 21st Fusiliers, at Chinsurah. He volunteered for service at the end of this year, and was transferred to a native regiment for the purpose. It appears that his military career received a temporary check as a result of an attack of remittent fever. In 1843 we find him tending the wounded after the battle of Maharajpore. Hinton was gazetted for a time to the 4th Infantry Regiment, which arose out of the defeated troops, who were converted into the Gwalior contingent. In 1846 he was on service during the first Sikh campaign, and in '47 he obtained a garrison appointment at Delhi. He served under Gough in 1848-1849 in the second Sikh campaign, and he took part with the 32nd Native Infantry in the battle of Goojerat. Later he was stationed at Wuzeerabad. After having been shifted from place to place, he marched with his regiment to Raneegunge, where the whole regiment was disarmed. It is stated that, by the miscarriage of a native's letter, the officers of the regiment escaped massacre on the road. He did not see any further fighting in the mutiny. By 1857 he had attained the rank of Surgeon-Major. He then effected an exchange into the 70th Regiment, and served with it for two years in China. This native regiment had volunteered for service in China, in order to demonstrate its loyalty. From 1859 to 1865 he was again in India. He then visited Australia for the benefit of his health, and later made a home in Adelaide. In 1868 he was placed on the retired list. Surgeon-Major Hinton spent 50 years within the circle of his family and a small acquaintance, and, although an active man up to the end, he did not seek an extended social intercourse. He was a regular habitué of the public library, and was a great reader In his early days he suffered from headaches, due to myopia, but later, as his vision became presbyopic, he dispensed with his glasses and never returned to them. In his later days he was somewhat deaf. In 1911 he fell and sustained an intracapsular fracture of the head of the left femur. Surgeon-Major Hinton was probably the oldest member of the medical profession in the British Empire. A curious incident is told of him that, when 90 years of age, he read of the death of a centenarian, Surgeon Hinton, of the Indian Army. He had never heard of his namesake before.

And thus ends a long and honourable life!

BELGIAN DOCTORS' RELIEF FUND.

We have to acknowledge the receipt from Dr. A. Jefferis Turner, of Brisbane, of £2 2s. as a further subscription toward the Belgian Doctors' Relief Fund.

Abstracts from Current Medical Literature.

THERAPEUTICS.

(194) Effects of Drugs on Respiration.

H. L. Higgins and J. H. Means have studied the effects of drugs upon the respiration of normal human subjects (*Journ. of Pharmacology and Exper. Therapeutics*, July, 1915). They have endeavoured to analyse the factors causing respiratory changes due to the actions of certain drugs, and to detect alterations which may occur (1) in the sensitivity of the respiratory centre, (2) in the relative amounts of the normal stimulants to the centre, (3) in the bronchial musculature, (4) in the rate, depth and regularity of the respiration, and (5) in the total gaseous exchange. The sensitivity of the respiratory centre has been followed by making frequent determinations of the tension of carbon dioxide in the alveolar air before and after the administration of the drug. Estimations of the volume of "dead space" have been made before and after the exhibition of the drug, to find whether a drug has a broncho-constrictor or broncho-dilator action. Graphic records have been taken to measure the rate and volume of the respirations. The gaseous exchange has been determined for periods of ten minutes by the use of Tissot's method or the Benedict universal apparatus. The drugs have been given in doses such as usually employed in medical practice. Those investigated have been atropine, caffeine, camphor, strychnine, morphine and heroin. Full details are given of the results obtained with two subjects on a number of separate occasions. The conclusions are summarized in a table. Atropine, in doses of one milligram, has no action on the respiratory centre. It causes dilatation of the bronchial tubes, and it increases the rate of metabolism. It has no effect on the rate of breathing. Caffeine, in doses of 100 mg., stimulates the respiratory centre and increases the rate of metabolism. It does not affect the size of the bronchial tubes, but it augments the respiratory rate. Camphor, in doses of 100 mg., has no action on the respiratory apparatus, while it may increase slightly the rate of metabolism. Strychnine, in doses of 4.5 mg., has no effect either on metabolism or on respiration. Morphine, in doses of 16 mg., lowers the rate of metabolism, depresses the respiratory centre, constricts the bronchial tubes, and increases the rate of respiration. Larger doses of morphine lessen the rate of breathing. Heroin, in doses of 5 mg., depresses the sensitivity of the respiratory centre, constricts the bronchial tubes, and has no effects on the rate of metabolism. It does not change the rate of breathing. Attempts are made to explain how these effects are brought about.

(195) Alarming Symptoms After Diarsenol.

A. H. Cook records three consecutive cases with severe symptoms after the intravenous administration of diarsenol, a substitute for salvarsan prepared in Toronto, Canada (*Journ. Amer. Med. Association*, March 11, 1916). Eleven consecutive injections of the preparation had been given to different patients without untoward results. Although the technique was similar, the next three administrations led to dangerous symptoms. In the first case, the patient complained during the injection of tingling in the extremities. The face became flushed, the arteries in the neck began to pulsate, while the pulse was rapid and bounding. As the pulse became shallow and the respiration feeble, the injection was stopped. Vomiting occurred and the patient became unconscious. The pulse was imperceptible, and respiration not apparent. The patient rallied in a few minutes, and recovered slowly. The second case showed similar symptoms, but the patient did not become unconscious. The third case was most severe. The patient appeared dead, but slowly rallied. In the two severe cases, the urine showed subsequently albuminuria and casts. Recovery occupied some days. No attempt was made to detect the presence of arsenic. The author says that these cases are due to shock or to poisoning, probably the latter.

(196) Spinal Anæsthesia with Tropacocaine.

L. L. Stanley (*Journ. Amer. Med, Association*, April, 1916) has submitted the results of the induction of spinal anæsthesia in 280 persons by tropacocaine to a critical study. He uses 1½ grains, which is dissolved in the cerebro-spinal fluid removed at the puncture. After the injection, the patient is placed on the back and later put in the Trendelenburg position from one to five minutes, according to the level of anæsthesia required. The longer time is needed for gastro-enterostomy. He has had only two cases of failure. There has been practically no shock after operation. Headache occurred in 22 cases. No permanent paralyses have eventuated. He believes that the period of convalescence is lessened when no general anæsthetic is employed. A fall of blood pressure occurs after the injection, but not to a dangerous degree. The operations performed under the anæsthesia have been those for varicose veins, fistula in ano, hæmorrhoids, radical cure of hernia, appendectomy, gastro-enterostomy, etc.

(197) Arseno-Benzol in Syphilis.

O. S. Ormsby and J. H. Mitchell have given 184 injections of arseno-benzol to 75 patients suffering from syphilis (*Journ. Amer. Med. Association*, March, 1916). They have used the derivative prepared at the Dermatological Research Laboratory of the Philadelphia Polyclinic (see this journal, p. 208). The cases treated may be classified as follows: eight had primary lesions, six had primary and secondary lesions, 31 had late manifestations and 28 had lesions limited to the nervous system. Two cases were not syphilitic. The drug has been supplied in ampoules containing 0.4 gm. The powder is soluble in boiling water. It yields an acid solution which is neutralized with soda in the same way as salvarsan. Most of the patients have been treated with mercury in addition to arseno-benzol, but 15 persons have received arseno-benzol alone. Of these cases, three presented primary sores, which healed within one week after one injection, four presented secondary lesions, which healed promptly, and five cases were affected by nervous lesions that have been improved. Reactions have been observed after ten injections. In four of these cases the reactions have been definite, and in one case the reaction has been severe. The injections have been given intravenously. No intramuscular injections have been employed. The dose employed varied from 0.2 gm. to 0.4 gm.

(198) Gynocardates in Leprosy.

Leonard Rogers (*Lancet*, February 5, 1916) has seen remarkable improvement in cases of macular and mixed leprosy treated with gynocardic acid and gynocardate of soda. In one case the improvement was the most remarkable. Gynocardic acid is believed to be the active principle of chaulmoogra oil. Heiser has recently obtained excellent results by means of intramuscular injection of chaulmoogra oil with resorcin and camphorated oil. Rogers came to the conclusion that sodium gynocardate applied subcutaneously should yield better results than Heiser's mixture. He therefore tried this treatment in anæsthetic and tubercular leprosy. At first he was forced to employ an impure preparation, but later he obtained a sample of the pure sodium salt. The doses used were from one to two grains, and given twice a week. His results justify him in recommending the method for careful trial by others.

(199) Extract of Corpora Lutea in the Nausea of Pregnancy.

J. C. Hirst relates the results of the administration of extracts of the corpora lutea in five pregnant women (*Journ. Amer. Med. Association*, February, 1916). The patients had suffered from excessive nausea in previous pregnancies. They received 1 c.cm. of extract of corpora lutea by intra-muscular injection. The treatment was commenced in the seventh or eighth weeks of pregnancy, when the nausea commenced. In four cases the results were gratifying. In one case the nausea ceased after four injections, in a second after nine doses, in the third after eight doses, and in the fourth after ten doses. The fifth case received no benefit from the injections. The author believes that larger doses could be employed to achieve more rapid results.

UROLOGY.

(200) X-Rays and Mesothorium in Malignant Tumour of the Bladder.

G. Kalischer (*Urologic and Cutaneous Review*, February, 1916) maintains that

X-rays, even though they be filtered and penetrating, do not exercise any definite curative action on malignant tumours of the bladder. As a rule, X-rays will produce a certain amount of benefit, inasmuch as the cystitis usually accompanying the neoplasm will clear up, and the hæmorrhage and pains will subside for a time. Under no circumstances will they lead to an appreciable shrinkage of the growth. The author doubts whether the exclusive application of X-rays is of pronounced value in preventing a recurrence after resection of the bladder for malignant disease. The endovesical application of mesothorium, however, is followed by results of an entirely different character. He records the histories of four cases in support of this statement. In the first case the cancer occupied practically the whole of the lower half of the bladder when he first saw the patient, eleven months before the time of reporting. Rapid improvement took place under the influence of mesothorium. After four months the bladder was seen, on cystoscopical examination, to be free from pathological changes, save for a small papillomatous nodule near the left ureter. This nodule was treated with high frequency fulguration through the cystoscope. Seven months later, no trace of any pathological change could be detected cystoscopically. In the second case, the tumour involved the trigone, including the whole circumference of the internal orifice. The patient was quite well when examined eight months after the institution of the mesothorium treatment. The third case was one of cancer of the trigone, arising from the bed of a removed prostate. The passage of an instrument through the posterior portion of the urethra was prevented by the growth. Suprapubic cystotomy was performed. The base of the bladder became quite smooth after the application of mesothorium, and a catheter passed readily through the urethra. The patient was still under treatment. The fourth case was one of an extensive cancer of the trigone. There were very distressing subjective symptoms. Under mesothorium treatment the local and general condition improved to so great an extent that the patient refused all further treatment, and even objected to a repeated examination.

(201) Hexamine as a Urinary Antiseptic.

Hexamine, the British name for urotropine, yields, on dissociation in an acid medium, ammonia and formaldehyde. It has long been recognized that if its action is required as an urinary antiseptic, it must be given in a neutral or alkaline medium. J. W. Thomson Walker points out that it may be necessary to give it in the form of keratin-coated tablets, to prevent the gastric acid from liberating formaldehyde, and thus disturbing digestion (*Medic. Press and Circular*, April 5, 1916). As a rule, it is sufficient to give it in large quantities of water, between meals. He calls attention to the fact that formaldehyde can be recognized in minute quantities, either by means of the phloroglucin test or by Burnam's modification of Rimini's phenyl-hydrazine test. In this way the urologist has an index of the usefulness of the antiseptic. In all cases, the urine should be controlled constantly with litmus, to ascertain its reaction. Unless there is a distinct acidity to litmus, no formaldehyde can be liberated, and, consequently, no action need be awaited. When the urine is alkaline, it may be difficult to render it acid. The only drugs which can effect this are acid sodium phosphate and ammonium benzoate. In some cases, no formaldehyde is liberated, even when the urine is acid. He has found that by increasing the dose from 5 or 10 grains to 15 or 20 grains abundance of formaldehyde appears. On the other hand, the symptoms of bacterial growth in the urine may be removed by rendering the urine alkaline. It has been demonstrated that this is due to a neutralization of the acid products, and not to a bactericidal action on the bacteria themselves. He also warns urologists that hexamine loses its action when greatly diluted. In acute bacillus coli infections, hexamine should not be used during the acute stages. He advises alkaline treatment, preferably with bicarbonate of soda. Later, as the process is clearing up, the urinary antiseptic may be used with advantage, the urine being rendered acid for the purpose. In alkaline cystitis, acid sodium phosphate or ammonium benzoate should be given until the burning pain and frequent micturition are relieved. Boric acid may be used in these cases. When the reaction of the urine has changed to acid, hexamine may be employed, in addition to the sodium or ammonium salt. The urologist should remember that occasionally the patient reveals an idiosyncrasy against hexamine. In the last place, he deals with the prophylactic uses of hexamine. He considers that it should be given prior to all operative procedures on the urinary organs and during the time when an instrument has to be passed regularly along the urethra. His experience teaches him that urinary infection not infrequently results from operative interference on the bowel or female pelvic organs. In these cases, hexamine may be used with advantage as a precautionary antiseptic.

(202) Chronic Urethritis in Women.

W. F. Shallenberger holds the opinion that chronic urethritis in women is more common than is usually recognized (*Journ. Americ. Med. Assoc.*, April 1, 1916). The symptoms are not always typical, and are at times not referred to the urethra. The author finds that, when women complain persistently of symptoms in the region of the pelvis, the urethra should not be overlooked as a possible source of the trouble, especially if no other pathological condition can be discovered. In his cases, the pathological condition of the urethra varied considerably. At times it was thickened throughout, as a result of infiltration. In these circumstances the urethra can be felt *per vaginam* as a thick cord. The mucous membrane is often seen through the urethroscope to be puffy, congested and œdematous. The vessels are at times enlarged, and definite ulceration is met with in some cases. He found that the picture of a congested, puffy, granular surface was the commonest. In certain cases these changes appeared to be diffuse and patchy. Bleeding after manipulation is not uncommon. A purulent urethral discharge was not observed frequently. The author deals with the ætiology and symptomatology of the condition, and then passes on to a consideration of the various forms of treatment. He prefers the application of a 5% solution of silver nitrate to the mucous membrane through the cystoscope to all other methods. This should be repeated every three to five days. Occasionally, stronger solutions, even up to 20%, are advisable, but they must be restricted to small areas. He has applied this mode of treatment in 52 cases. In 16 patients there was a simple urethritis, without any accompanying signs or history of cystitis or of acute purulent urethritis. One patient had an accompanying ureteritis. In 29 patients there was either a pre-existing cystitis or some form of chronic urinary infection, such as cystitis, trigonitis or pyelitis, when they first applied for treatment. Two had incontinence, due to a relaxed vesical sphincter. From four to eight applications usually sufficed to effect a cure. Several patients, however, required many more.

(203) Caudal Anæsthesia in Genito-Urinary Surgery.

B. Lewis and L. Bartels (*Surg., Gynec. and Obstet.*, March, 1916) have employed a special technique of "caudal" anæsthesia for operations on the genito-urinary apparatus, and are satisfied with their results. They emphasize the difference between this method and that of spinal anæsthesia. In the latter the solution is injected into the sacral canal through the sacral hiatus, just above the coccyx. They recommend the use of a ½% solution of novocaine and potassium sulphate, with the addition of two drops of a 1‰ adrenaline solution to each 30 c.cm. of the solution. The quantity injected varies between 40 c.cm. and 90 c.cm. The larger dose is required for severe operative procedures, such as prostatectomy. They describe in detail the technique of the injections and the precautions which they consider necessary. They insist on the avoidance of accidental intravenous injection, and of puncture of the spinal canal. They have performed prostatectomy 13 times with the aid of this method. In 10 instances no other form of anæsthesia was needed except local infiltration of the abdominal wall. They suggest that the use of larger amounts of weaker solutions may result in a marked improvement of the method.

British Medical Association News.

SCIENTIFIC.

A clinical meeting of the New South Wales Branch was held on May 12, 1916, at the B.M.A. Building, 30-34 Elizabeth Street, Sydney, Dr. Sinclair Gillies, the President, in the chair.

Jackson's Membrane.

Dr. C. E. Corlette read the notes of a case of *Jackson's parieto-colic membrane* producing symptoms. These notes will be published in a subsequent issue.

Epithelioma of the Lip.

Dr. C. E. Corlette also read notes and comments on an illustrative case of *epithelioma of the lip*. A short discussion followed. This case will also be published in a subsequent issue.

Ovarian New Growths.

Professor David A. Welsh demonstrated a series of specimens of primary new growths of the ovary. The first case was one of *adenocarcinoma of the ovary* in a girl, aged 16 years. The patient complained, on applying to Dr. Dunlop for treatment, of an increase in size of the abdomen for two months. There had been continuous pain for two days, but none before. Professor Welsh had demonstrated this specimen at a clinical meeting of the Branch on April 14, 1916 (see *The Medical Journal of Australia*, April 22, 1916, p. 346). In reply to an inquiry, Dr. Dunlop had written to Professor Welsh to the effect that as far as he had been able to ascertain there was no evidence of a primary growth in any other part of her body. The patient had had her appendix removed six years before. He had no information of the condition of the appendix. The growth was unilateral, and the left ovary and tube were apparently normal. Dr. Dunlop raised the question why it was nearly always the right ovary that was affected in unilateral cases. Professor Welsh stated that he was unaware that the right ovary was the one usually affected.

Professor Welsh exhibited some secondary growths in the liver and lung from a case of *alveolar carcinoma of the ovary*. The microscopical appearances were quite typical, and he used the specimens to illustrate the secondary effects of the disease. The patient had been under the care of Dr. William T. Chenhall.

Dr. Chenhall recounted the history of this patient. She was 43 years of age. She had applied for treatment on account of abdominal swelling, pain, respiratory distress, and difficulty in, and frequency of, micturition. The swelling had appeared two years before, and was painless at first. For three months she had been unable to walk owing to dyspnœa. The difficulty in urination was characterized by a long delay in the onset of the flow. Menstruation had begun at 13 years, and had been regular until a short time before she consulted Dr. Chenhall. The last periods had been scanty. The patient was very thin, and her facial expression was worn and distressed. On examination, the whole of the abdomen was found to be greatly distended by rounded, irregular, semi-fluctuating masses. A provisional diagnosis of cystic disease originating in the right ovary and an abdominal section was performed. An enormous mass of cystic growth, extending upwards into both kidney pouches, was discovered. The tumour growth removed filled a gallon basin. No difficulty was experienced in clearing out the abdomen. The patient made a good recovery, and left for the country some weeks later. About a year later Dr. Harvison was asked to treat her. She was then greatly emaciated, and her liver was much enlarged. All he could do was to ease her pain. She died about five weeks later. Post mortem: The lungs, liver, kidneys and pancreas were found to be invaded by carcinoma in solid masses of large irregular epithelial cells. Dr. Chenhall pointed out that the absence of inflammatory trouble, the slow progress of the disease, and the tremendous enlargement of the abdomen were points of special interest in the case.

Professor D. A. Welsh then demonstrated a specimen to illustrate how a simple tumour might become malignant. The patient was a woman aged 28 years, who was admitted into St. Vincent's Hospital, under the care of Dr. O'Gorman Hughes. The diagnosis of tubercular peritonitis had been made on the basis of marked ascites. A laparotomy was performed, and a number of small bodies about the size of melon seeds were found distributed over the peritoneum. There were small growths on each ovary. These growths were not considered serious enough to remove. About a gallon of fluid was withdrawn from the abdomen. The patient left the hospital greatly improved, but returned some weeks later with ascites. The abdomen was again opened, and over a gallon of fluid was evacuated. Both ovaries were found to be involved by cysts, which were bound down to every part of the pelvis. They were removed, but the patient died two days later. No post mortem examination was allowed. Professor Welsh showed that the ovary took the form of a large cyst, with papillomatous ingrowths and outgrowths.

In discussing the three specimens, he pointed out that primary growths might be actually or potentially malignant. Actual malignancy from the beginning was well illustrated in the first two cases, and Professor Welsh held the opinion that potential malignancy was a characteristic of every ovarian cystic growth. Under ordinary circumstances the cystic development was strongly barricaded off from the peritoneum by the thickened capsule of the ovary. The capsule continued to thicken as the tumour increased in size, so that even if the mass were as large as a Rugby football, the capsule would be represented by a thick fibrous investment. The increase in size of the tumour would stimulate the activity of the fibroblastic cells, and the nutrient vessels would develope vigorously on the capsular surface. But if, at operation, or by injury, or from loss of restraint by the investing capsule, the epithelial lining of the cyst emerged from the confines of the cyst wall, it would grow vigorously as either a multiple dissemination on the peritoneum or a heaped-up mass on the exterior of the cyst. This was illustrated in Dr. O'Gorman Hughes's case. In both cases the epithelial proliferation was forced into a papillomatous type on a free surface, or into a cystic formation when it was massed together. It was quite common for both types to be present in combination. The speaker called attention to the practical importance of recognizing the potential malignancy of the ovarian epithelium especially lining the spaces of a cystoma. As long as the epithelium was restrained within the thickened capsule, only a complicated increase in size of the cystoma resulted. When freed from this restraint the epithelium, on being implanted on the congenial soil of the peritoneum, grew luxuriously, and acquired all the clinical aspects of a malignant dissemination.

Sarcoma of Bone.

Professor D. A. Welsh demonstrated a series of sarcomata involving bone and periosteum. The first specimen was a *round-celled sarcoma of the left axilla*. The patient had been under the care of Sir Alexander MacCormick, at the Coast Hospital. He had noticed a swelling in the axilla ten weeks before admission. The patient had attributed the swelling to an injury received four years before, or to a flesh wound on the hand received 10 weeks before. There was no history of lymphangitis. The swelling was of the size of a goose's egg, and was hot and tender. Fomentations were applied without benefit, and as the growth increased in size a portion was removed for microscopical examination. The tumour was found to be a round-celled sarcoma with perithelial tendency. The limb was removed by Sir Alexander McCormick. Professor Welsh pointed out the sarcoma cells growing around the vessels.

The next specimen was a foot with a *round-celled sarcoma* invading the dense fibrous membranes. The patient had been under the care of Dr. George Bell, of the Sydney Hospital. Ten months before admission the foot became black and swollen as the result of a bicycle accident. A month later the colour was restored to normal, but the sole of the foot remained swollen. The swelling increased from this time, and spread on to the dorsum of the foot. The foot was removed.

The third specimen was a foot with a *sarcoma* starting from the outer side of the *os calcis*. The man was a patient of Dr. F. P. Sandes, and was 65 years of age. He had had a swelling in the foot for three months, and had noticed an enlargement of the glands in the groin for an indefinite time. One of the glands was removed for microscopical

examination. Professor Welsh found that it consisted of necrotic sarcoma tissue, in which there were outlines of masses of small spindle-cells and areas of necrosis and hæmorrhage. The foot was removed. He pointed out that this form of sarcoma was the least malignant, and showed the least tendency to secondary dissemination. In spite of this fact the glands had become involved at an early stage.

Professor Welsh stated that in all these cases the external bulging gave no adequate idea of the extent of the internal infiltration. This could only be revealed by a complete hemisection of the mass. He called attention to the fact that sarcoma of bone was very frequently associated with injury. The relation to injury was twofold. In the majority of cases a history of injury preceding a history of tumour and the new growth was probably caused by injury. In other cases the growth predisposed the injury, and the injury was frequently the first thing to direct attention to the presence of the new growth.

Sarcoma of Periosteum.

Professor Welsh then dealt with the periosteal type of sarcoma. He exhibited a specimen of a *diffuse sub-periosteal round-celled sarcoma*, which he had obtained at Edinburgh. He had no record of the history of the case. The next specimen was a humerus with a *periosteal sarcoma of the round-celled type*. The patient, a woman aged 25, had been under Sir Alexander MacCormick on account of an enlargement of the left arm. She complained of pain, which was worse at night. The left upper arm was amputated through the shoulder joint. There was a pale, lobular firm tumour; and the outer and inner heads of the triceps, the belly of the biceps and the brachialis anticus were extensively infiltrated.

Professor Welsh showed the femur of a young woman aged 23, who had been a patient of Dr. Abbott's. She had had a swelling in the thigh for seven months. It had started as a small lump, and had increased gradually without pain or tenderness. It had caused some stiffness in the knee. There were no palpable glands in the groin. The leg was amputated, and the tumour proved to be a *round-celled sarcoma* (small cells), with areas of necrosis and hæmorrhage. Professor Welsh pointed out that these growths did not affect the bone directly, but that in all cases there was a remarkable thickening of the outer layer of dense bone. There was no rarefaction. There was probably a stimulation of the osteoblastic tissue.

He concluded his demonstration by exhibiting two specimens of *ossifying and chondrifying sarcoma*. The first was from a patient, who had been under the care of Dr. O'Gorman Hughes, and who had complained of rheumatic pains in and around the left knee joint for 11 months. The patient had noticed five months before a swelling above the knee joint. The swelling had gradually increased in size, had become hard, and had caused continuous pain. The leg below the knee was swollen and painful. Amputation was performed. On examination the tumour was found to be composed of the mixed-celled type of sarcoma, with predominance of round cells. It corresponded to what is known as an osteo-chondro-sarcoma. The extension of growth had taken place into the medullary cavity of the shaft for nearly half its length, and also along the periosteum. Both the medullary and the periosteal parts were of bony hardness, and had the general appearance of highly rarefied bone. There was no thickening of the bone corresponding to the periosteal extension. He suggested that this was due to the fact that the osteoblastic energy was excessive within the new growth, but not beyond its limits. A similar limitation of bone formation was seen in his last specimen, which had been exhibited at the previous meeting (see page 348).

Dr. C. Ayres referred to another case of spontaneous fracture due to a tumour of bone, probably a sarcoma. The patient had been attending the hospital on account of a growth in the orbit, and in getting out of the lift had fractured his thigh. Dr. Ayres discussed the diagnosis by means of radiogram of new growths of bone.

Dr. W. T. Chenhall expressed his indebtedness to Professor Welsh for the very valuable demonstration he had given. Referring to the question of ovarian cysts, he considered that Pfannenstiel's classification was the best for clinical purposes. Since there was no definite line of demarkation between the premalignant and the malignant stages, early and free operation was necessary. He regarded ascites as a sign which suggested malignancy. It was a new fact to him that the right ovary was more frequently affected than the left. This might be due to prolonged irritation caused by a pathological appendix. In support of this suggestion he referred to the frequency of cancer in the floor of the mouth in betel-nut chewers.

Dr. F. P. Sandes dealt with the relation of injury to the formation of a new growth. He thought that it would be strange that sarcoma of the bone was not more frequent if it were due to injury, in view of the fact that everyone injured their bones very often. He instanced the case of a girl who was struck on the arm with a tennis racket, and a sarcoma developed shortly after. He would be very careful to accept the statement that the sarcoma was due to the injury.

Dr. Sinclair Gillies thanked Professor Welsh for his excellent demonstrations.

In his reply, Professor Welsh was inclined to regard Dr. Chenhall's suggestion as plausible. If there was one antecedent condition to malignancy it was irritation. He pointed out that the specimen exhibited did not in his opinion illustrate grades of malignancy. The whole point was a question of opportunity. It was usually an accidental factor whether the cells penetrated the ovarian capsule.

Calcified Glands.

Dr. D. Kelly read a note of a case of calcified glands which had been mistaken for stones in the ureter. This case, together with the discussion, will be published in a subsequent issue.

Dilatation of Œsophagus.

Dr. C. Ayres gave a short account of a patient who complained of attacks of difficulty in swallowing. A radiogram was exhibited, showing the dilatation of the œsophagus, which had been filled with bismuth emulsion. There was no detectable change to account for the obstruction. Dr. Ayres discussed briefly the possible pathology of the case.

Dr. F. P. Sandes regarded it as an instance of cardiospasm, and referred to another case he had observed.

Dr. G. H. S. Lightoller referred to two cases of cardiospasm in his own practice. The first patient had been bitten in the throat by a stallion. He then experienced difficulty in swallowing solid food. Two years later the dysphagia recurred and increased. The patient was treated with a variety of medicines and diets, but no difference was produced. The skiagram revealed a typical appearance. The patient was subsequently in the hands of a dentist, who found that while the condition of his teeth was good, the grinding surfaces were not in apposition. He carried out a dental regulation, and from that time onwards the difficulty in swallowing disappeared. In the second case there was difficulty in swallowing solids, and a great effort had to be made in the act. All methods of treatment having proved of no avail the patient was regarded as incurable. A subsequent dental treatment, however, resulted in the disappearance of the symptom.

Dr. Paul Ernest Voss, of Rockhampton, Queensland, has been nominated for election to the New South Wales Branch.

Medical Societies.

(Affiliated with the British Medical Association.)

CENTRAL NORTHERN MEDICAL ASSOCIATION.

The Annual Meeting of the Central Northern Medical Association was held on April 18, 1916, at West Maitland, New South Wales.

The following were elected office bearers and members of the Committee:—

President: Dr. Wilfred Nickson.
Vice-President: Dr. J. J. Hollywood.
Hon. Secretary and Treasurer: Dr. Hugh G. Allen.
Members of the Committee: The Hon. Dr. J. L. Beeston, M.L.C., C.M.G., Dr. E. Ken Herring, Dr. J. R. Leslie, Dr. N. G. Dunlop, Dr W. N. Horsfall, Dr J. P. Hocken, and Dr. R. J. Nixon.
Delegate to attend the Annual Meeting with the Council of the N.S.W. Branch: D. Hugh G. Allen.

THE PREVENTION OF DIPTHERIA.

The Commonwealth Departmental Committee, appointed to enquire into the causes of invalidity and death within the Commonwealth, have issued a report dealing with diphtheria. The authors preface their remarks by calling attention to the general experience in Australia that, while antitoxin had effected a marked reduction in the mortality of this disease, the prevalence of the disease has increased during recent years.

The History of Diphtheria in New South Wales.

The records of the number of deaths in New South Wales from diphtheria, including membranous croup, from 1875 to 1894 show that there were remissions between the exacerbations of the epidemics and that the death-rate per million inhabitants varied between 277 and 768. In 1894, the rate was 378 per million. Early in 1895 antitoxin was available, and from that year until 1900 a steady decrease was registered, until 65 per million was reached. Since 1901, the death-rate has undergone considerable variation. In 1903 it was 131, in the four following years it remained below 100, and from 1909 to 1914 it rose again from 117 to 139, and reached 178 in 1913.

The Committee suggest that, since diphtheria is a disease of children, a lessened birth-rate should be accompanied or followed by a diminution in the mortality. This factor, however, does not appear to have influenced the position to any great extent.

The History of Diphtheria in Victoria.

A table is given, setting forth the number of deaths from diphtheria in each year since 1871, and the mortality per million of population in Victoria. From this table it appears that the death-rate varied during the period 1871-1892 between 275 and 922. The average rate for the whole period was about 521. In 1893 it fell to 155 and in the following year it was 190. This was prior to the introduction of antitoxin. From 1895 onwards, the rate fell, save for a rise to 270 and 209 in 1897 and 1898, until a minimum was reached of 47 per million of population in 1906. Subsequently, the rate rose again; in 1911 it was 181, and in 1912 it was 185. In 1914 it was 148. The authors suggest that the cause of the fall just before the introduction of antitoxin may have been due to an exhaustion of epidemic influences, and an active administration of health affairs.

They show that the case mortality in Melbourne between 1890 and 1894 fell from 32% to 18.5%. They do not attempt to explain why the lowest mortality was delayed until the period 1905-1909.

In order to arrive at a fuller knowledge of the conditions obtaining, they reproduce the notification returns since diphtheria became a notifiable disease in the State of Victoria. During the first five years the average number of cases reported was 1,584; during the second five years it rose to 1,680, and, during the third, it fell to 1,410. Since 1910 it has averaged no less than 4,612. Expressed as an incidence rate per 1,000 of population, we learn that, starting at 15, it gradually fell to 1.1, rose in 1904 to 1.8, to fall in the two succeeding years to 0.9 and 0.7 respectively. Since 1907 it has risen from 1.3 to 3.8 in 1911 and 1913, and 3.4 in 1914.

The Statistics of Western Australia.

In Western Australia the course of the epidemics of diphtheria has been a most irregular one.

Age and Other Factors.

The authors demonstrate that diphtheria is a disease of childhood, and that the great majority of those dying of it were under five years of age. Antitoxin is stated to have saved thousands of lives, but while it does this, it has probably increased the number of bacillary carriers.

They show that the variation of epidemic tendency is an element of marked importance, but that this factor is but imperfectly understood.

Methods of Spread of Infection.

The Committee discuss the various suggestions which have been made in respect to the spread of the infection. Having discarded the idea of a seasonal cause, they consider the mode of direct spread from person to person, and that of indirect spread through food. Infection conveyed by insects, clothing and air is regarded as improbable. In regard to the direct spread of infection, they state that the all-important element in the spread is the personal infection either from a person definitely ill with diphtheria, or from a person with a mild, unrecognized attack, or from a carrier. They quote Osler in support of the contention that true diphtheria may exist under the guise of a simple catarrh of the tonsils or pharynx. They find that some strains of diphtheria bacilli are highly virulent, while others are destitute of toxic power, and that there are various intermediate grades.

They then pass on to the consideration of the carrier. They quote Sacquepee (*Bulletin de L'Institut Pasteur*), to illustrate the frequency of diphtheria carriers under various conditions. According to this calculation, carriers represent from 4% to 8% of the population in countries where diphtheria is endemic.

In the attempt to control the infective person, the first essential is early knowledge of the fact of infectivity. It is considered that compulsory notification of carriers, as well as of persons actually ill should be introduced. The Committee suggest that existing legislation be carefully considered, with the object of introducing reforms necessary to enable this to be carried out. They consider that an exact bacteriological diagnosis should be made in all cases of sore throat, and that facilities for this work should be extended. Further, they ask for the bacteriological control of convalescents before discharge. Increased accommodation in hospitals should be provided, and other means should be adopted to ensure that the treatment shall be satisfactory, both in hospitals and elsewhere. For localized epidemics, they propose that portable hospitals should be utilized. They state that it is not known at present in what proportion carriers stand to the general population. It would appear from Sacquepee's calculations, however, that the proportion is small. They indicate the sources of the carrier state and recommend that a systematic search for infective persons should be carried out within a widening circle, commencing with those persons in association with recognised cases of the disease. Mobile laboratories should be instituted, to enable this investigation to be undertaken. For extra-metropolitan districts, special organized assistance should be rendered by the central authority.

How the carriers are to be handled when discovered is a matter requiring further investigation. The aim is to prevent them from spreading the disease. Isolation is suggested as a measure promising satisfactory results.

In conclusion, the Committee consider that there are several points in connexion with diphtheria which need further investigation, and, for this purpose, they recommend that localized epidemics should be studied by trained observers, and that epidemiological and bacteriological investigations should be conducted by persons devoting themselves exclusively to this work. These investigators should be freed from all administrative responsibility, but should work in association with those who have this responsibility. The epidemic occurrence of diphtheria has been so irregular in Australia, and the causes producing these great variations are so little understood that the Committee urge that the subject should be studied very carefully at some future time.

Public Health.

THE HEALTH OF NEW SOUTH WALES.

The following notifications have been received by the Department of Public Health, New South Wales, during the week ending May 13, 1916:—

	Metropolitan Combined Districts.		Hunter River Combined Districts.		Remainder of State.		Total.	
	Cs.	Dths.	Cs.	Dths.	Cs.	Dths.	Cs.	Dths.
Enteric Fever	18	1	2	1	18	1	38	3
Scarlatina	54	0	6	0	75	0	135	0
Diphtheria	71	4	10	0	126	1	207	5
C'bro-Sp'l Menin.	3	2	—	—	—	—	3	2
Infantile Paralysis	3	0	—	—	2	0	5	0
Pul. Tuberculosis	45	2	—	—	†		45	2
Malaria	3	0	—	—	—	—	3	0

† Notifiable only in the Metropolitan and Hunter River Districts.

THE HEALTH OF VICTORIA.

The following notifications have been received by the Department of Public Health, Victoria, during the week ending May 14, 1916:—

	Metropolitan. Cs.	Dths.	Rest of State. Cs.	Dths.	Totals. Cs.	Dths.
Diphtheria	102	3	67	0	169	3
Scarlatina	28	0	31	1	59	1
Enteric Fever	4	0	9	3	13	3
Pulmonary Tuberculosis	19	4	8	3	27	7
C'bro-Spinal Meningitis	12	—	10	—	22	—
Infantile Paralysis	3	—	0	—	3	—

INFECTIVE DISEASES IN QUEENSLAND.

The following notifications have been received by the Department of Public Health, Queensland, during the week ending May 13, 1916:—

Disease.	No. of Cases.
Malaria	1
Pulmonary Tuberculosis	11
Diphtheria	31
Scarlatina	10
Enteric Fever	20
Erysipelas	2
Ankylostomiasis	1
Varicella	1
Puerperal Fever	1

INFECTIVE DISEASES IN WESTERN AUSTRALIA.

The following notifications have been received by the Department of Public Health, Western Australia, during the week ending May 6, 1916:—

Disease.	Perth. Cases.	Fremantle. Cases.	Rest of State. Cases.	Total. Cases.
Enteric Fever	3	1	2	6
Diphtheria	2	0	11	13
Scarlatina	1	0	0	1
Pulmonary Tuberculosis	1	2	1	4
Erysipelas	1	2	1	4
Ophthalmia	1	0	0	1
Cerebro-Spinal Meningitis	9	4	5	†18
Infantile Paralysis	0	0	1	1

† Sixteen of the eighteen persons were notified as "carriers" after bacteriological examination.

An announcement is made in the *Western Australian Government Gazette* of May 12, 1916, that model by-laws under Section 267 of the Health Act, 1911-1915, dealing with the eradication and destruction of mosquitoes have been adopted for the district of Maylands. In the same issue, it is announced that the whole of Series B of the model by-laws have been adopted for the district of Donnybrook.

INFECTIVE DISEASES.

The Bulletin issued on May 12, 1916, by the Quarantine Department contains the following information:—

Small-pox.

There have been two cases of small-pox reported in New South Wales during the period from April 28 to May 11, 1916.

In the Dutch East Indies 825 cases and 257 deaths have been notified since the last report. The Bill of Health issued in Hong Kong refers to 18 cases and 15 deaths. In the Philippine Islands there was 1 case and 1 death between February 26 and March 3, 1916, and 12 cases (varioloid) between March 11 and April 14. In the Straits Settlements 2 cases have been reported between March 21 and April 3, 1916.

Plague.

The number of cases of plague notified in India between March 19 and April 1, 1916, was 15,417. In the same period there were 13,426 deaths. There were 83 cases and 82 deaths in Java between February 20 and March 10, 1916. In Egypt there were 180 cases between March 17 and March 30, and 91 deaths. In Ceylon 14 cases were reported between March 19 and April 8. In Hong Kong 5 fatal cases have been reported in the last Bill of Health. In the Orange Free State 2 cases and 2 deaths took place between March 30 and April 2, 1916. One case was reported from Singapore on May 6, 1916.

Vital Statistics.

SYDNEY AND NEWSCASTLE.

Sydney.

The Government Statistician of New South Wales has issued his annual report on the vital statistics for the year 1915.

The population of the metropolitan area was 763,000, including 104,200 in the city. The increase in population during the year was 10,500. This increase depended on a considerable increase of the suburban population, while the population of the city actually decreased by 6,500.

Marriages.

During 1915, 10,122 marriages were contracted, which corresponds to a marriage-rate of 13.36 per 1,000 of population. The number is the largest yet recorded, and the rate is 8% above the average for the five preceding years. The number of marriages in the metropolis is equal to the number in the whole State in the year 1901. No less than 311 males and 1,590 females who were married were under 21 years of age. The proportion of marriages celebrated by the clergy was 96.66% of the total number.

Births.

The births registered number 20,871. This is equivalent to a birth-rate of 27.54. The rate in the years 1906 to 1910 was lower and from 1911 to 1914 was higher than that of 1915. To each 100 females born there were 107 males. Of the 20,871 infants, 1,480, or 7.09%, were illegitimate. This is equivalent to an illegitimate birth-rate of 1 95 per 1,000. Of the illegitimate, 61% were born in public institutions.

Deaths.

The total number of deaths was 8,189, and the death-rate 10.81 per 1,000 of population. This rate is higher than the average death-rate for the preceding 10 years. In 1907 it was 10.97, in 1911 it was 10.9, in 1912 it was 11.37, and in 1913 it was 11.18. In all other years the rate was lower than that of 1915. There were 1,516 infants under one year of age who died during the year. The infantile mortality was therefore 72.6 per 1,000 of births. The infantile death-rate has diminished almost constantly since 1907. The lowest figure was recorded in 1914. An exceptionally high infantile mortality occurred in November and December, when the majority of the deaths were due to diarrhœa and enteritis. In 65 instances the age at death was 90 or over. Only one person attained the age of 109.

Causes of Death.

There were 1,261 deaths due to affections of the cardio-vascular system, 463 due to Bright's disease, and 82 due to cirrhosis of the liver. It may thus be said that at least 1,808 deaths were attributable directly or indirectly to noxes acting on the vascular system. In 704 cases the cause of death was organic disease of the heart, in 276 it was cerebral hæmorrhage, in 118 it was atheroma or some other arterial disease, and in 63 it was acute endocarditis.

Among the infective diseases, diarrhœa and enteritis were the most common cause of death. It was recorded in 682 cases. Tuberculosis comes next, with a record of 485, of which 370 were instances of pulmonary tuberculosis. Acute miliary tuberculosis caused only 21 deaths. Morbilli caused 175 deaths, diphtheria 101, enteric fever 83, simple meningitis 59, scarlatina 48, cerebro-spinal meningitis 43, influenza 26, septicæmia 17, erysipelas 12, dysentery 9, tetanus 10, leprosy 4, beri-beri 5, and malaria 2. To the above should be added 40 deaths due to syphilis, 43 to acute articular rheumatism and 39 to acute nephritis. Pneumonia caused 404 deaths, broncho-pneumonia 237, chronic bronchitis 134, acute bronchitis 66 and pleurisy 23.

The number of deaths due to cancer was 671. In 233 of the cases, the site is said to have been the stomach and liver, in 107 the peritoneum and intestines, in 94 the female genital organs, in 52 the breast and in 37 the mouth. Diseases of the prostate caused 35 deaths, and uterine and ovarian tumours and other non-malignant diseases of the female pelvic organs caused 48 deaths. In 45 cases women died of puerperal septicæmia, in five of *phlegmasia alba dolens*, and in three of the results of illegal operations. Accidents associated with pregnancy and parturition accounted for 35 deaths and puerperal convulsions for 16.

There were 291 deaths due to accident, and 119 to suicide. Among the obviously preventable deaths of infants, 18 were attributed to injury at birth and three to want of care.

Newcastle.

The population of the Newcastle district on December 31, 1915, was 58,750. In 1906 the population was 55,340. It reached 56,000 in 1912.

Marriages.

There were 871 marriages in the district during the year. The marriage-rate was thus 14.83 per 1,000 of population. It has varied between 10.59 in 1909 and 14.84 during the last 10 years. Of the total number of persons married, 5.74% were males under 21 years of age, and 26.87% were female minors. Two males and one female were incapable of writing.

Births.

There were 2,114 births registered during the year, which is equivalent to a birth-rate of 36.00 per 1,000 of population. This rate is 12% above the average rate of the preceding five years. In 1910 it was 27.93, while in all other years since 1906 it has been above 30. Of the total number of children born, 113, or 1.93 per 1,000 of population, were illegitimate. The illegitimate birth-rate was lowest in Lambton and highest in Newcastle city.

Deaths.

The deaths in the district numbered 739. This is equivalent to a death-rate of 12.59. The lowest death-rate during the past 10 years was in 1911 (10.44). In 1910 it was 10.45, in 1906 it was 11.75, in 1914 it was 11.78, in 1913 it was 12.53, in 1908 and 1909 it was just under 13, and in 1907 just over. The highest rate was in 1912, when it was 13.71. Of the 739 deaths, 128 were of children under one year of age. The infantile mortality was thus 86 per 1,000 births. During the past ten years it has been 100 or more on three occasions, 92 once, over 80 twice, over 70 twice, and 68 once.

Causes of Death.

There were 112 deaths from affections of the cardio-vascular system, 60 of which occurred in people over 65 years of age, and 49 in persons between 20 and 64. Sixty-four of the deaths were due to organic diseases of the heart, 21 were due to cerebral hæmorrhage, 12 to atheroma, 7 to embolism or thrombosis, and two each to angina pectoris and aneurysm. There were 36 deaths from Bright's disease and six from cirrhosis of the liver.

Diarrhœa and enteritis caused 92 deaths. In 72 the victims were under two years of age. Tuberculosis caused 32 deaths. In 24 the disease was situated in the lung. In 25 of the 32 the patients were over 20 years of age. There were 24 deaths from pneumonia, 18 from chronic bronchitis, 15 from broncho-pneumonia, 12 from morbilli, 9 from acute bronchitis, 8 from enteric fever and the same number from simple meningitis, 5 from diphtheria, 3 each from pertussis and septicæmia, 2 each from dysentery, erysipelas, tetanus, acute rheumatism and cerebro-spinal meningitis, and one from encephalitis.

Cancer killed 45 persons, 23 being males and 22 females. In 37 cases the individuals were over 20 and under 65, and in 18 65 or over.

Puerperal septicæmia proved fatal on five occasions; three women died of the results of illegal operations. Among the causes of death in early infancy, premature birth appears 64 times, congenital debility, icterus and sclerema 13 times, congenital malformations 11 times, and injury at birth twice.

Naval and Military.

The Base Records Office of the Department of Defence have issued on May 20, 1916, a return of the casualties among the Australian troops on active service up to date. The casualties are stated to be exclusive of those in men whose names have appeared in the casualty lists and who have since returned to duty. The number of cases of sickness is 22,453. This number presumably does not include those men who died of sickness. The total number of deaths is 7,355, and the total number of men wounded is 9,590. The proportion of deaths from wounds to those from sickness is not given.

It is with great regret that we have to record the death on active service of Lieutenant Arthur Cyril Albert Jekyll, R.A.M.C.

In the 170th casualty list issued on May 20, 1916, it is announced that Major S. S. Argyle is ill in hospital.

The Faculty of Medicine of the Melbourne University have recommended all those who graduate in medicine in August of the current year and who propose to join the expeditionary forces to serve for six months as regimental medical officers at a hospital before joining the forces. It is urged that, by doing so, they will render themselves more competent to discharge their military duties and they will be more prepared to accept other offices or to enter professional practice when their military service is terminated.

Obituary.

FRANCIS SPENCER BOND.

It is with great regret that we record the death of Captain Francis Spencer Bond, which occurred at the Base Hospital, Melbourne, on April 11, 1916, after a lingering illness.

Francis Spencer Bond was born in Melbourne and educated at the Scotch College. He began his medical course at the Melbourne University, but, after completing his first year, he proceeded to London and entered at St. Mary's Hospital, where there were several Australian students. He obtained the diploma of the Conjoint Board of the Royal College of Surgeons of England and the Royal College of Physicians of England in 1891. Almost immediately after qualifying, he returned to Victoria. Dr. Bond first entered into practice at Heathcote. He was successful in building up a good practice in that town. In 1899 he sold his Heathcote practice and settled in Bruthen. He soon formed a lucrative connexion in his new surroundings, and became a popular and esteemed practitioner in the Bruthen district for many years. He identified himself with the progress of the town, and, although of a retiring disposition, was held in the highest respect as a good citizen. In 1915, Dr. Bond experienced a great sorrow in the death of his wife. Shortly after his bereavement, he offered his services to the military authorities. The offer was at once accepted, and, after a few months spent in camp, he proceeded to the front in charge of a field ambulance. His health broke down and he was invalided home after a few months of active service. He eventually succumbed to an incurable condition. Dr. Bond leaves a daughter and three sons to mourn his loss. Two of the sons are on active military service with the Australian Forces, and the third is a midshipman on H.M.A.S. *Australia*. By the death of Dr. Bond, the profession loses a man of simple tastes and high ideals, who was at all times impelled by a genuine desire to do his duty.

Special Correspondence.

(By Our Special Correspondent.)

LONDON LETTER.

Medical Research.

The annual report for 1914-15 of the Carnegie Trust for the Universities of Scotland was issued at the end of January. It is signed by Lord Elgin, and shows that the war has affected profoundly the endowment of research. For the year under review, six Fellows and nine scholars have been engaged on military duty, and in three cases the fellowship, or scholarship, has been kept open in case the recipient should be able to resume research work. In spite of this handicap, however, much useful work has been done during the year, and the expenditure under this head has been £6,957 5s. 2½d.

Dr. Dobbie, in his report, announces that:—

> "At St. Andrew's no fewer than 14 Carnegie beneficiaries, assisted by a large number of untrained volunteers, have been engaged under Professor Irvine's direction in the preparation of dulcitol and other chemicals required for medical purposes. Dulcitol is closely related to the sugars, which have been the subject of numerous researches at St. Andrew's in recent years. The intimate knowledge thus acquired has enabled Pro-

fessor Irvine and his pupils not only to organize the preparation of dulcitol on the large scale, but to introduce modifications into the method of synthesizing it, whereby both the cost of the substance and the time required for its production have been greatly reduced."

In his report on the work of the laboratory of the Royal College of Physicians, Dr. James Ritchie says that, as in the past, the laboratory has been asked to investigate outbreaks of epidemic disease. During the winter, epidemic cerebro-spinal meningitis claimed most attention, and a considerable amount of work bearing upon the part played by contacts in the spread of this condition was carried out. The committee also placed the resources of the laboratory at the disposal of the Admiralty for work in clinical pathology, and, as a result, a considerable increase in the reporting department has taken place. In October, 1914, in response to an appeal from the Belgian Minister in London, the laboratory prepared about 8,000 doses of various vaccines.

Panel Doctors and the Recruiting Campaign.

The County of London Insurance Committee discussed at a recent meeting the position of panel doctors in regard to the requirements of the Army. The Medical Benefit Sub-Committee reported that a large number of practitioners on the panel were already engaged on service, either with the Navy or with the Army, and they were of opinion that by careful consideration and co-operation it might be possible for a still greater number of practitioners to be released, if they so desired. The Committee were of opinion, however, that in certain areas the number of doctors in practice, even in normal times, was not adequate to the needs of the population, and that if the number were still further reduced, the position would be very serious. They were in communication with the Insurance Commissioners on the subject.

The Chairman of the Sub-Committee pointed out that, in spite of recruiting, the number of insured persons in London remained at a very high figure. It was the healthy young men who had joined the army, and vast numbers of women workers had taken their places. Already a certain number of men invalided from the army had returned to civil employment and had re-entered insurance. It would therefore be realized that the incidence of disease would be at least as high as in pre-war time, and might well prove to be rather higher.

A committee was appointed to deal with the matter.

The Rhodes Scholarships.

The Rhodes Trustees, in their statement for the year 1914-15, announce that the war has continued to interfere with the normal operation of the scholarship system, as it has with university life generally throughout the Empire. Nearly all the colonial undergraduate scholars have entered the Imperial Service for the period of the war. In all cases the trustees have granted leave of absence to such scholars, reserving to them the right to resume their scholarships when they are set free from military service. Only eighteen colonial scholars continued in residence up to the end of last term. Of these, five had either obtained or applied for commissions, four are unable to serve for reasons of health or defective eyesight, and six, who are pursuing a medical course, are advised to continue this work at the university. Permission to postpone entrance at Oxford has also been granted to colonial scholars elected for 1916, so as to leave them free to respond to the call of national duty.

Up to the present time, 167 scholars and ex-scholars are known to have taken commissions or enlisted in the Imperial Army and its colonial contingents. Of these South Africa has contributed 53, Australia 43, Canada 42, Bermuda 8, Jamaica 8, Newfoundland 6, New Zealand 6, the United States 1. The list of ex-scholars taking service increases as new contingents are formed in the dominions and colonies.

The examination of candidates for the scholarships of 1916 was held throughout the American Union on October 5 and 6 last. One hundred and fifty-eight candidates offered themselves for examination, of whom 26 passed the whole examination, 41 passed in Latin and mathematics, and so became eligible for election, subject to passing in Greek before entering the university, and 91 failed to satisfy the examiners.

Correspondence.

THE COMMONWEALTH COMMITTEE'S REPORT ON HIGH TENSION.

Sir,—Your last number contained an adverse criticism of the Report on the Risks of Middle Age submitted to the Government of the Commonwealth by the Departmental Committee, consisting of Dr. A. J. Wood, Dr. Cumpston, myself and our Chairman, Mr. Mathews, M.H.R.

In reply I ask you to be so good as to state plainly and in some detail in your next issue what advice you would give to a man somewhat over 40 showing signs of high tension. After your criticism you owe this to the community.

Kindly avoid for the moment theoretical explanations, as it is much more important to know what should be done, than to formulate any precise theory. Frequently our beliefs are discovered by study of our acts.

Yours, etc.,

H. B. ALLEN.

University of Melbourne,
May 15, 1916.

[The Departmental Committee was appointed ostensibly for the purpose of ascertaining, as far as is possible, the causes of certain preventible diseases which lead to invalidity and death in a large number of cases, and after having determined these causes, of suggesting prophylactic measures to reduce this invalidity and death. It therefore comes as a surprise that Professor Sir Harry Allen should depart from the general problems aiming at the introduction of measures, which could be applied to the whole community, and fasten his attention to a question in practical medicine, as applied to the individual. Notwithstanding this strange departure from the subject of our criticism, we would have complied with his request had he not asked us to achieve the impossible. Professor Sir Harry Allen supposes that the signs of high tension are discovered in a man just over 40 years of age, and asks us to state plainly what we should do. We have yet to learn that any means have been discovered which are capable of reducing a pathological increase in blood pressure for more than a brief space of time. We might essay to devise some campaign of treatment if Sir Harry would inform us what the cause of the persistent high tension is in his hypothetical case, but we cannot engage to recommend a sound method of treatment of a symptom, in regard to the mechanism of which we have to confess ignorance. We may add that if Professor Sir Harry Allen can tell us, and through us the medical world, what permanently raised blood pressure is due to, he will be conferring on humanity a gift of inestimable value. He, as a scientist of great eminence, must recognize as clearly as anyone that practical medicine based on hazardous theories is unlikely to benefit the community. Our contention is that, in so far as high tension is concerned, no known form of treatment is of any use, because the causes of the symptom are as yet shrouded in mystery. Unfortunately we have no "precise theories" to formulate, but look to the Departmental Committee for one.]

Our attention has been drawn by the Studebaker Corporation of Australasia, Limited, to their advertisement, which appeared in our issue of March 4, 1916, in which a price is quoted for their motor-cars. The price given is incorrect, and should not have appeared. The error was due to a misunderstanding of the instructions of the firm.

Proceedings of the Australasian Medical Boards.

NEW SOUTH WALES.

The following have been registered under the provisions of "The Medical Act," 1912 and 1915, as duly qualified medical practitioners:—

Beale, John George Morris, M.B., 1916, Univ. Sydney.
Burge, Arthur Macafee, L.R.C.P., Edin., 1915; L.R.C.S., Edin., 1915; L.R.F.P.S., Glasg., 1915.

Carter, Gerald Bayley, M.B., B.Ch., B.A.O., 1896, Univ. Dubl.

Sutton, Ernest Robinson, M.B., B.S., 1893, Univ. Melb.

QUEENSLAND.

The following have been registered under the provisions of the "Medical Act, 1867," as duly qualified medical practitioners:—

Butler, Patrick, L.R.C.S.I., 1870; L.R.C.P., Irel., 1872.

Howard, Arthur John de Size, M.B., Univ. Syd., 1916.

Kesteven, Hereward Leighton, M.B., 1914; Ch.M., Univ. Syd., 1916.

McKenzie, Arthur Duncan, M.B., Univ. Syd., 1916.

Noble, Frank Wesley, M.B.,Ch.B., Univ. Aberd., 1915.

Warren, William Edward, M.D., Ch.M., Q. Univ. Irel., 1873.

Medical Appointments.

Dr. Charles St. Leger Willis, Government Medical Officer, Milton, New South Wales, has been appointed, together with eight other gentlemen, inspector under the provisions of section 50 of the "Cattle Slaughtering and Diseased Animals and Meat Act, 1902."

Dr. T. J. Hennessey has been appointed District Medical Officer and Public Vaccinator, Youanmi, Western Australia.

Dr. E. Paget Thurston has been appointed District Medical Officer and Public Vaccinator, Busselton, Western Australia.

Dr. S. H. Cooke has been appointed Public Vaccinator for the North-Eastern District, Victoria, in place of Dr. E. Robinson Sutton (resigned).

Dr. H. H. Field Martell has been appointed Public Vaccinator for Midland District, Victoria, in place of Dr. T. B. Ryan (resigned).

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser," page xv.

Texas District Hospital, Queensland, Medical Officer.

Brisbane Hospital, Resident Medical Officer.

Medical Appointments.

IMPORTANT NOTICE.

Medical practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429 Strand, London, W.C.

Branch.	APPOINTMENTS.
QUEENSLAND. (Hon. Sec., B.M.A. Building, Adelaide Street, Brisbane.)	Brisbane United F.S. Institute. Laidley Hospital, Medical Officer.
WESTERN AUSTRALIA. (Hon. Sec., 230 St. George's Terrace, Perth.)	Swan District Medical Officer. All Contract Practice Appointments in Western Australia.
NEW SOUTH WALES. (Hon. Sec., 30-34 Elizabeth Street, Sydney.)	Department of Public Instruction—New Appointments as Medical Officer, Ophthalmic Surgeon, Ear, Nose and Throat Surgeon, Physician. Australian Natives' Association. Balmain United F.S. Dispensary. Canterbury United F.S. Dispensary. Leichhardt and Petersham Dispensary. M.U. Oddfellows' Med. Inst., Elizabeth Street, Sydney. Marrickville United F.S. Dispensary. N.S.W. Ambulance Association and Transport Brigade. North Sydney United F.S. People's Prudential Benefit Society. Phœnix Mutual Provident Society. F.S. Lodges at Casino. F.S. Lodges at Lithgow. F.S. Lodges at Orange. F.S. Lodges at Parramatta, Penrith, Auburn, and Lidcombe. Newcastle Collieries — Killingworth, Seaham Nos. 1 and 2, West Wallsend.
SOUTH AUSTRALIA. (Hon. Sec., 3 North Terrace, Adelaide.)	The F.S. Medical Assoc., Incorp., Adelaide.
NEW ZEALAND: WELLINGTON DIVISION. Hon. Sec., Wellington.)	F.S. Lodges, Wellington, N.Z.

Diary for the Month.

May 27.—North. Suburbs Med. Assoc. General Meeting (Warringah Hall, Neutral Bay).
May 30.—N.S.W. Branch, B.M.A., Medical Politics Committee, Organization and Science Committee.
May 31.—Vic. Branch, B.M.A., Council.
June 2.—Q. Branch, B.M.A., General
June 7.—Vic. Branch, B.M.A., Branch.
June 9.—S. Aust. Branch, B.M.A., Council.
June 9.—N.S.W. Branch, B.M.A., Clinical.
June 13.—Tas. Branch, B.M.A., General.
June 13.—N.S.W. Branch, B.M.A., Ethics Committee.
June 14.—South Sydney Med. Assoc (N.S.W.).
June 15.—Vic. Branch, B.M.A., Council.
June 20.—N.S.W. Branch, B.M.A., Executive and Finance Committee.
June 21.—W. Aust. Branch, B.M.A., General.
June 23.—Q. Branch, B.M.A., Council.
June 27.—N.S.W. Branch, B.M.A., Medical Politics Committee, Organization and Science Committee.

EDITORIAL NOTICES.

Manuscripts forwarded to the office of this Journal cannot under any circumstances be returned.

Original articles forwarded for publication are understood to be offered to *The Medical Journal of Australia* alone, unless the contrary be stated.

All communications should be addressed to "The Editor," *The Medical Journal of Australia*, B.M.A. Building, 30-34 Elizabeth Street, Sydney, New South Wales.